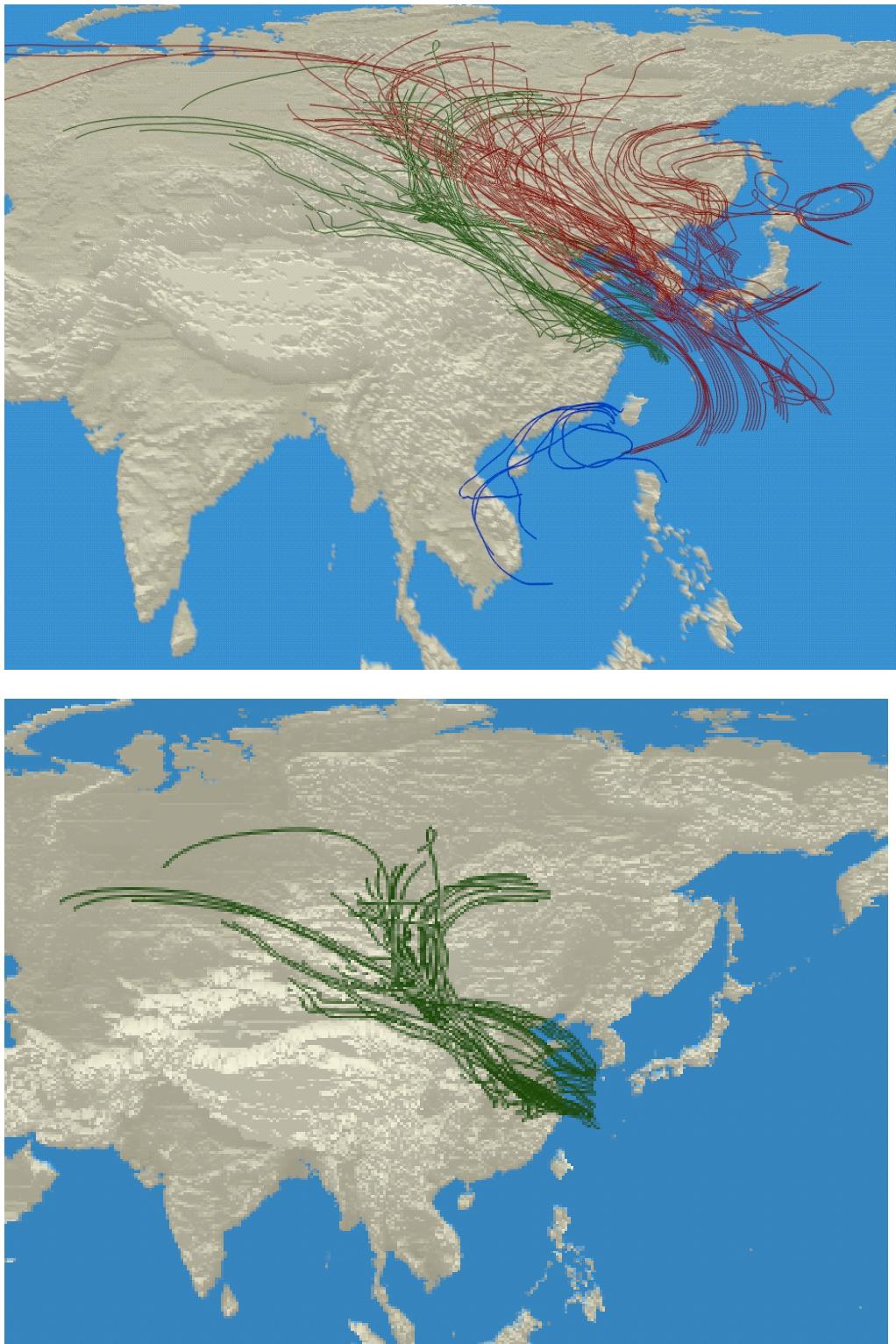
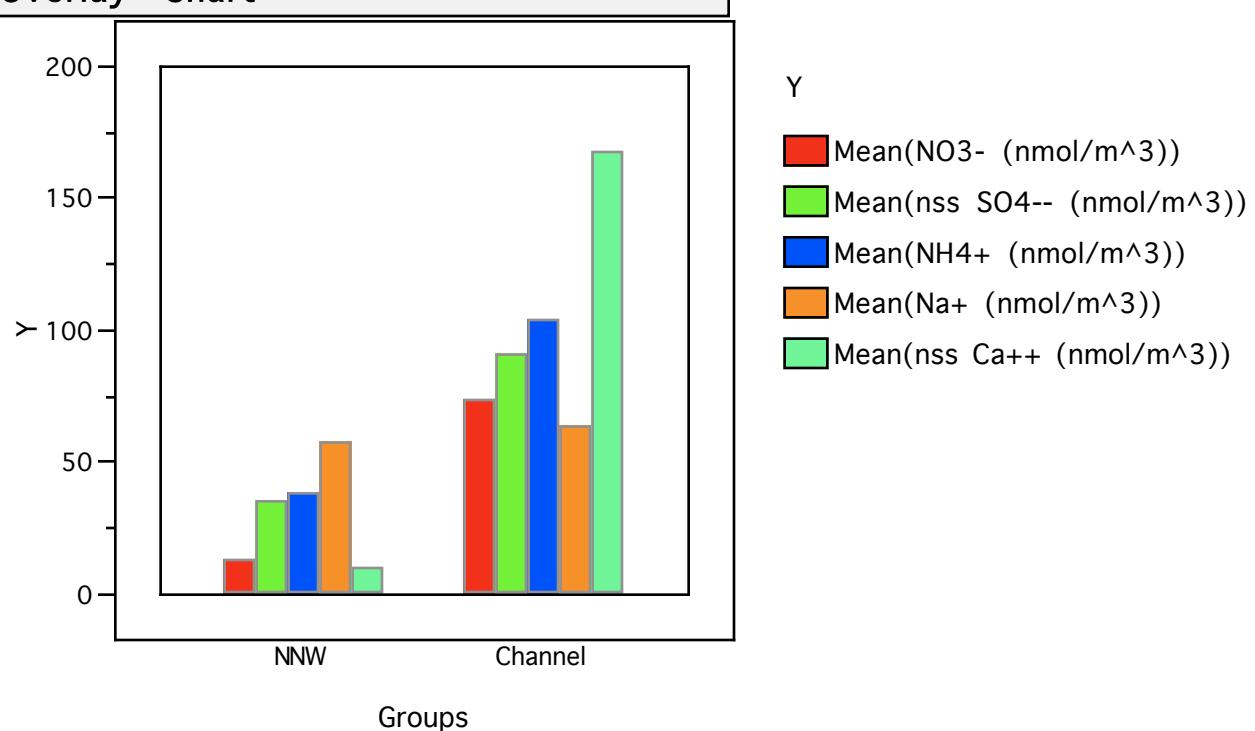


**Figure 1.** Map of cold air outbreaks and suspended dust routes in east Asia, from Sun et al., [2001].

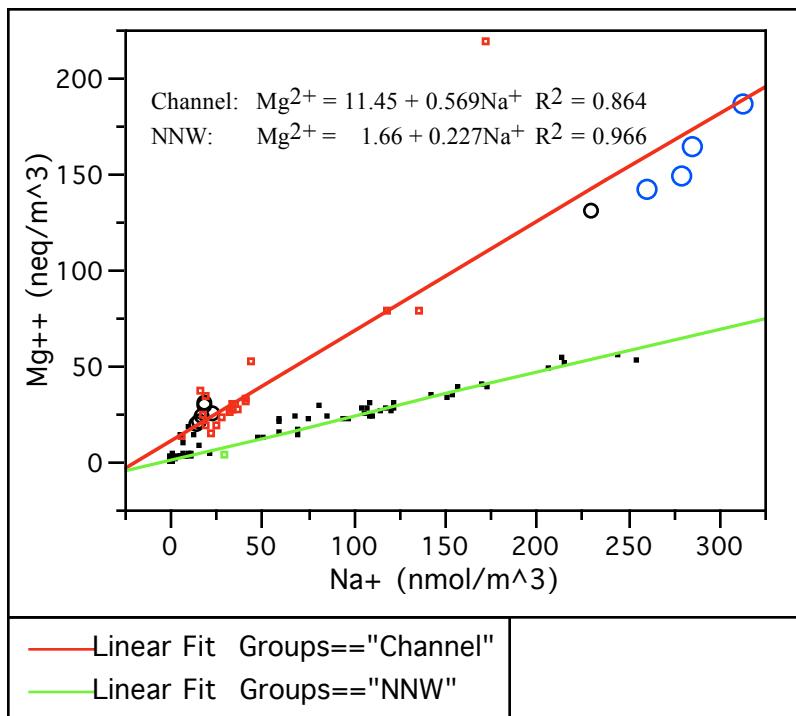


**Figure 2.** Back trajectories of the dust sector (Channel, green) and the non-dust sector (NNW, red).

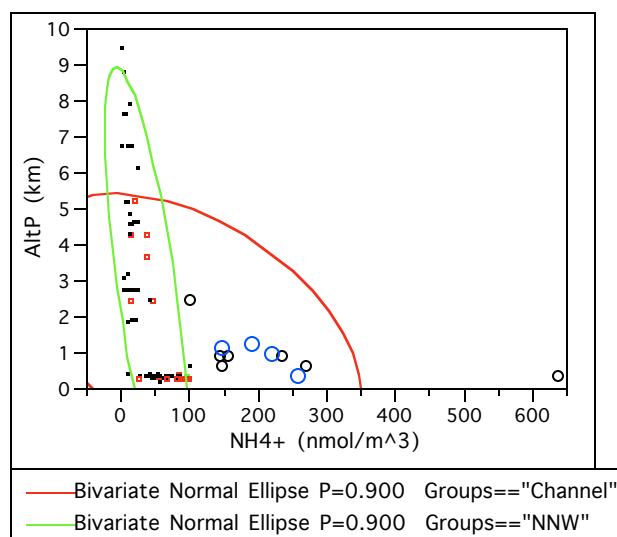
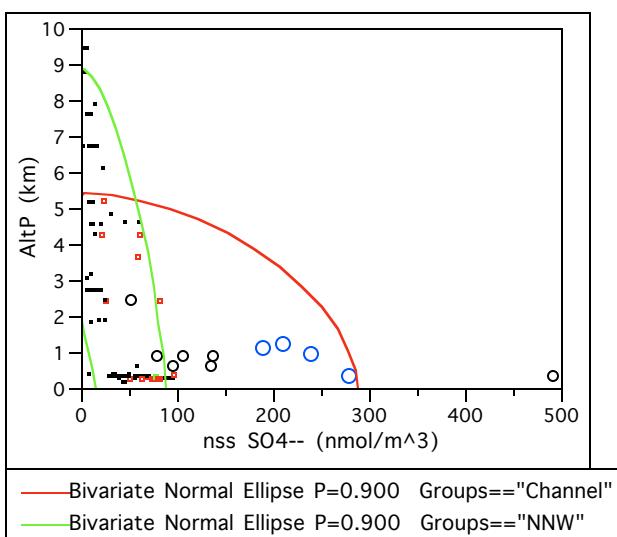
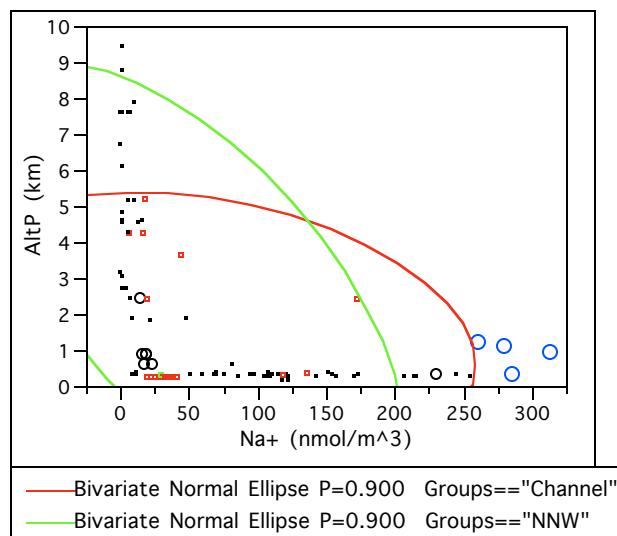
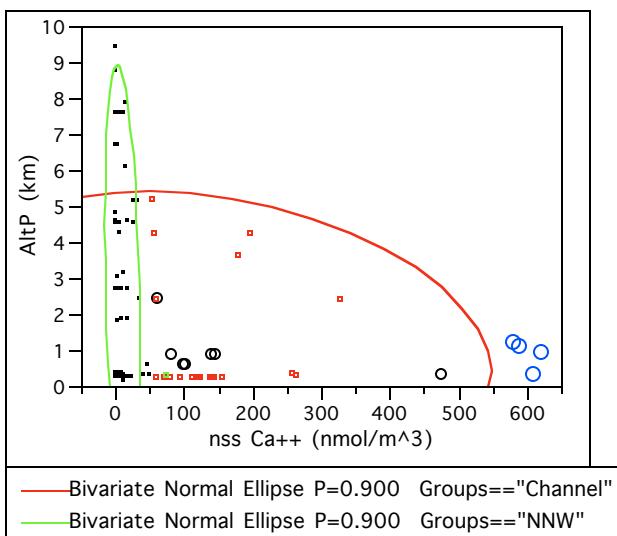
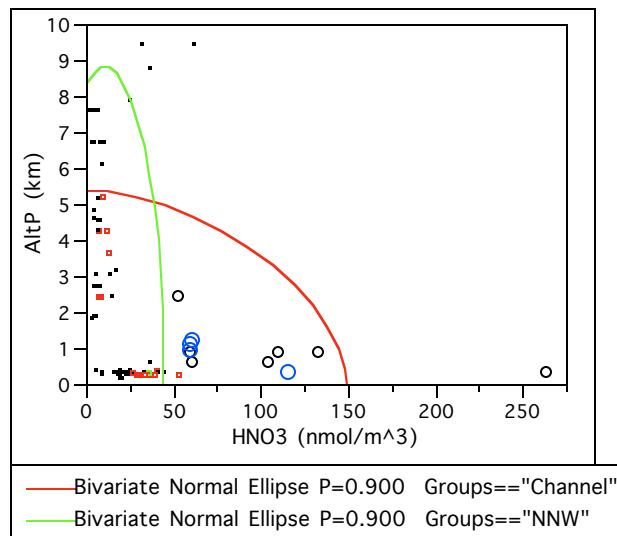
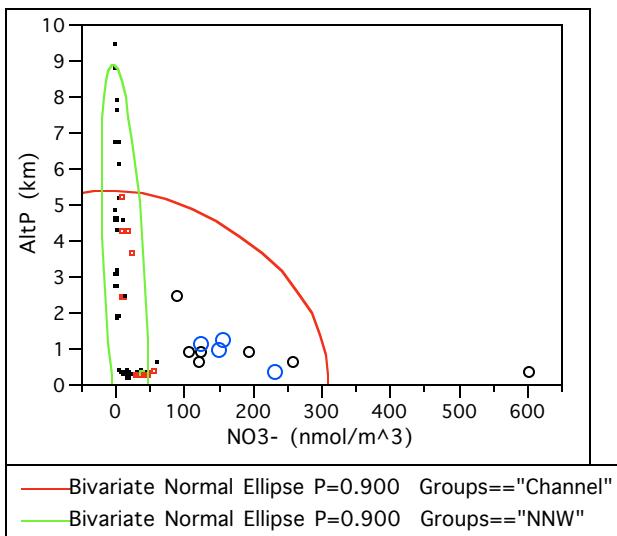
## Overlay Chart



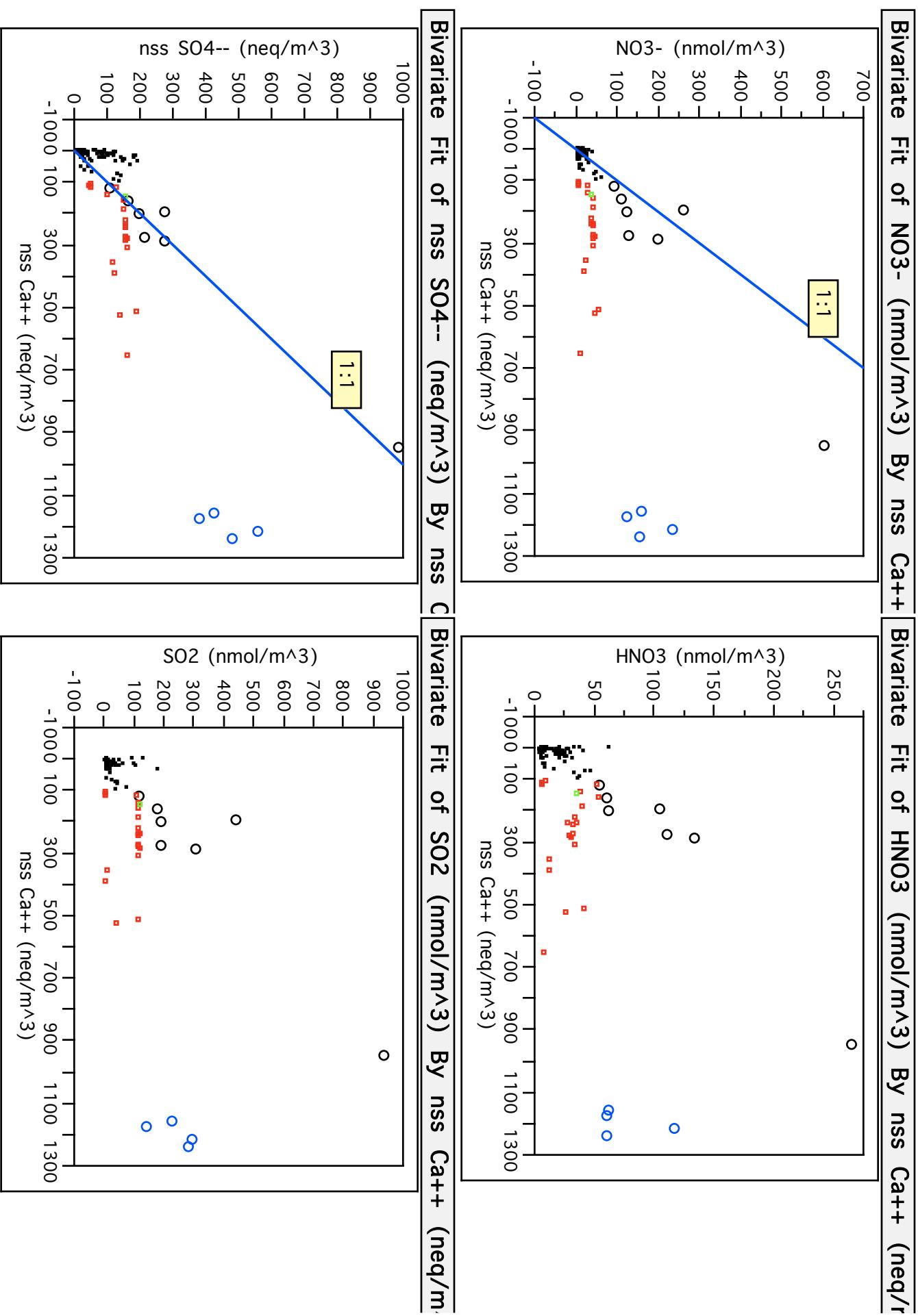
**Figure 3.** Mean aerosol mixing ratios for NNW and Channel sectors.



**Figure 4.**  $\text{Mg}^{2+}$  versus  $\text{Na}^+$ .

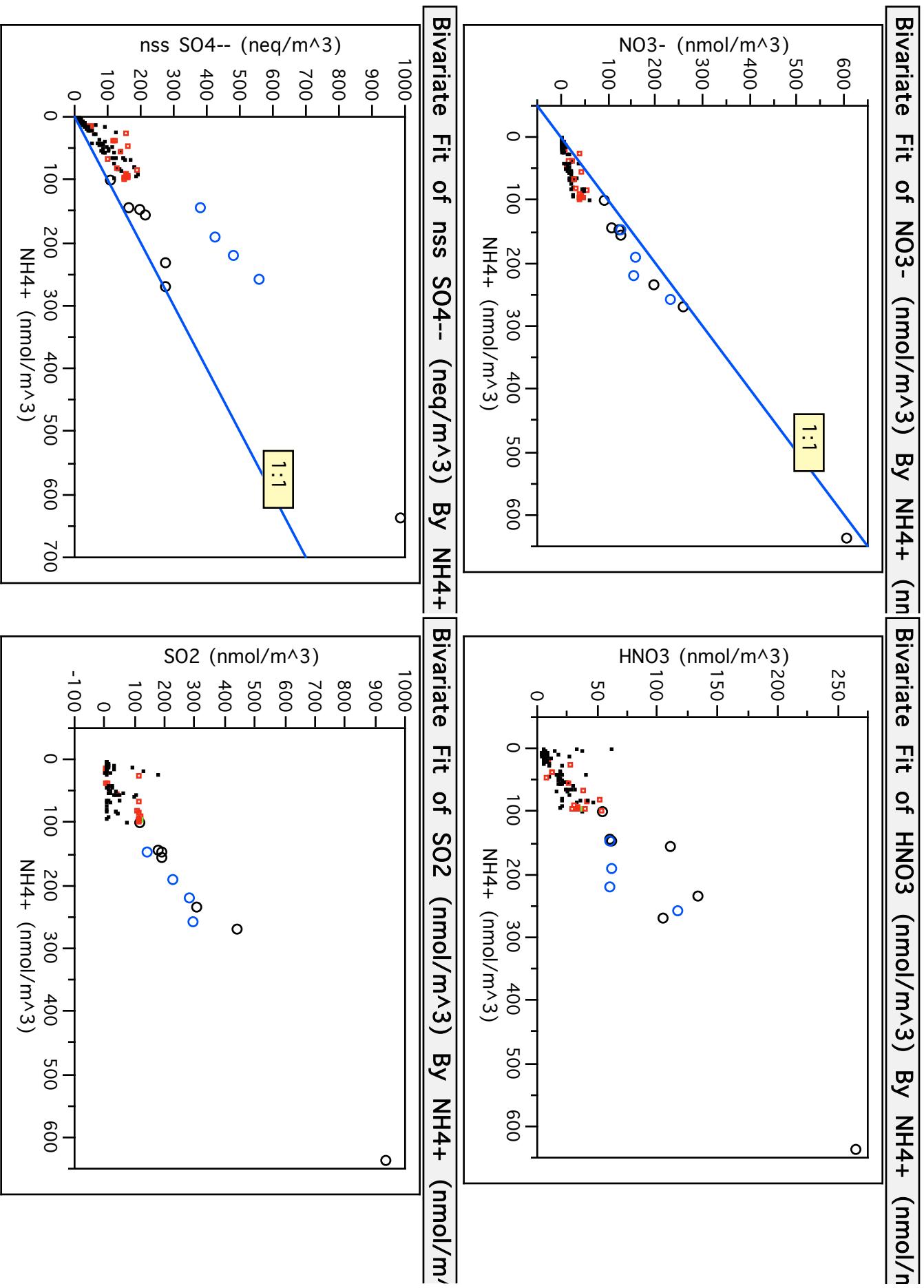


**Figure 5.** Aerosol and  $\text{HNO}_3$  mixing ratios shown as a function of altitude. The density ellipses enclose 90% of the points within their respective groups.

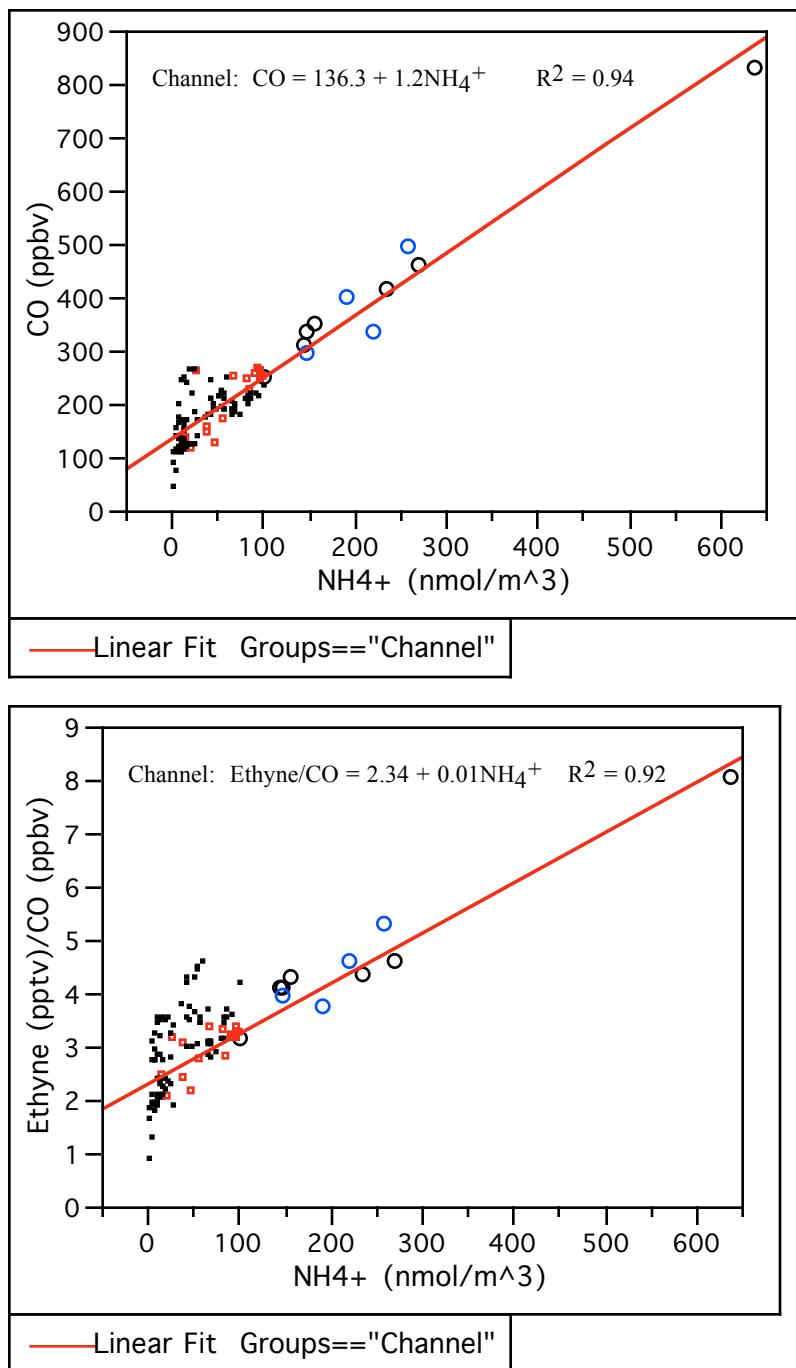


**Figure 6.**  $\text{NO}_3^-$ , nss- $\text{SO}_4^{=}$ ,  $\text{HNO}_3$ , and  $\text{SO}_2$  shown as a function of dust (nss- $\text{Ca}^{2+}$ ). Circles indicate dust samples with enhanced

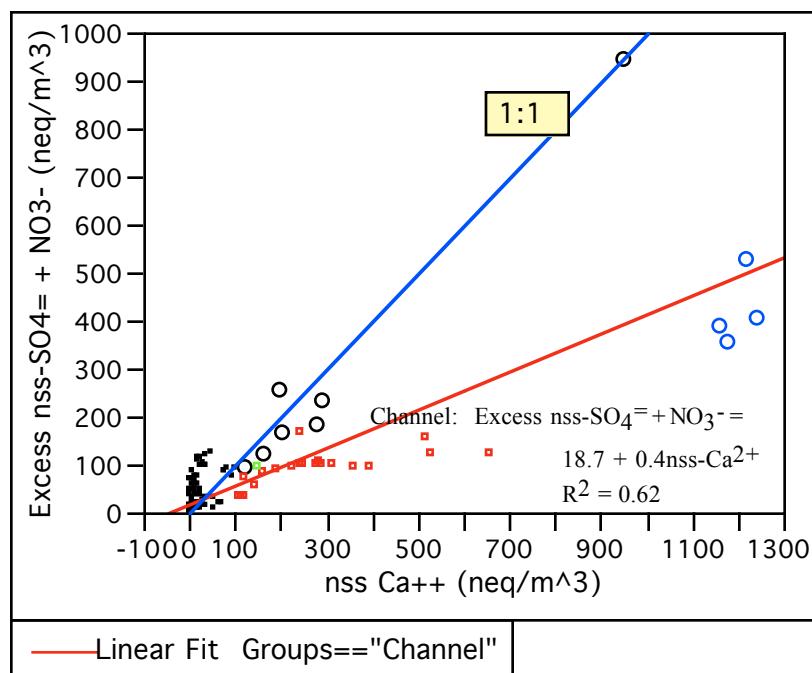
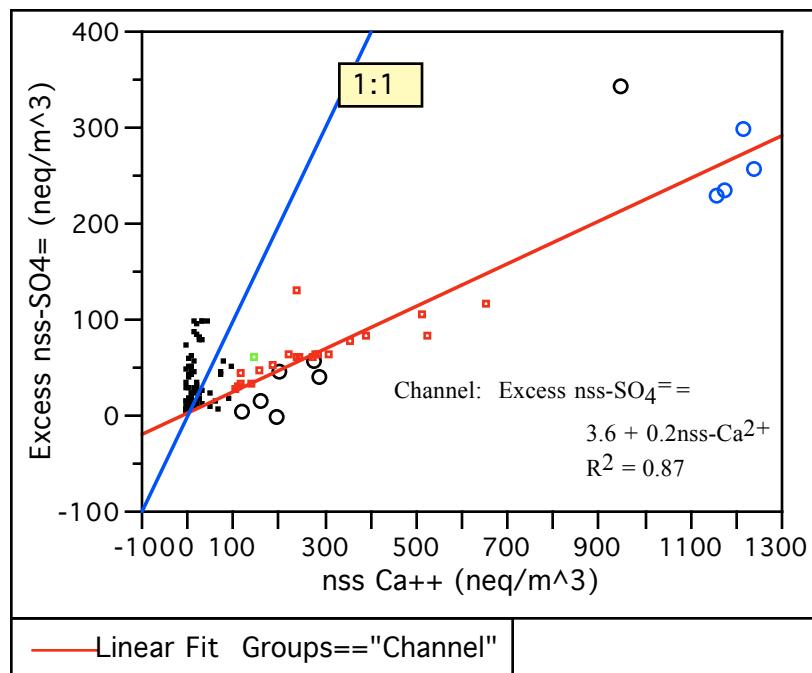
$\text{NO}_3^-$ - and nss- $\text{SO}_4^{=}$ . Squares indicate dust samples without enhanced pollution species.



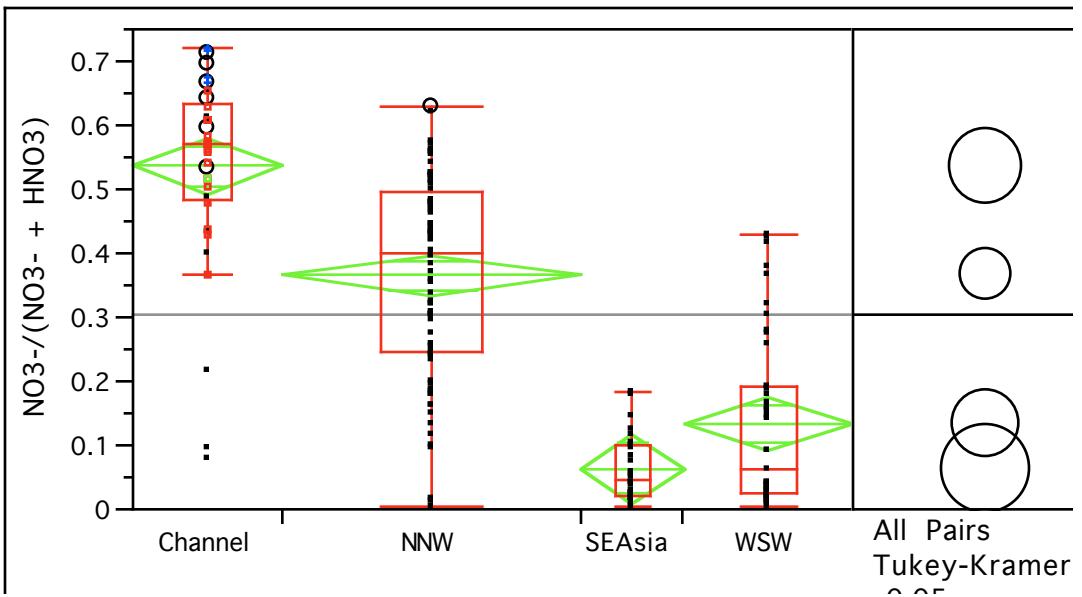
**Figure 7.**  $\text{NO}_3^-$ ,  $\text{nss-SO}_4^{=}$ ,  $\text{HNO}_3$ , and  $\text{SO}_2$  shown as a function of  $\text{NH}_4^+$ . Circles indicate dust samples with enhanced  $\text{NO}_3^-$  and  $\text{nss-SO}_4^{=}$ . Squares indicate dust samples without enhanced pollution species.



**Figure 8.** CO and Ethyne/CO versus NH<sub>4</sub><sup>+</sup>. All data from NNW and Channel are plotted, but only those from Channel are used for the linear fits.



**Figure 9.** Excess nss-SO<sub>4</sub><sup>=</sup> and excess nss-SO<sub>4</sub><sup>=</sup> + NO<sub>3</sub><sup>-</sup> versus nss-Ca<sup>2+</sup> show how much of these species are available for uptake by dust after allowing NH<sub>4</sub><sup>+</sup> to take up as much nss-SO<sub>4</sub><sup>=</sup> as possible.



**Figure 10.** Comparison of  $\text{NO}_3^-$  partitioning between the dust sector (Channel), a sector with a lot of sea salt (NNW), and two sectors where the influence of dust and sea salt are minimal (SE Asia and WSW).